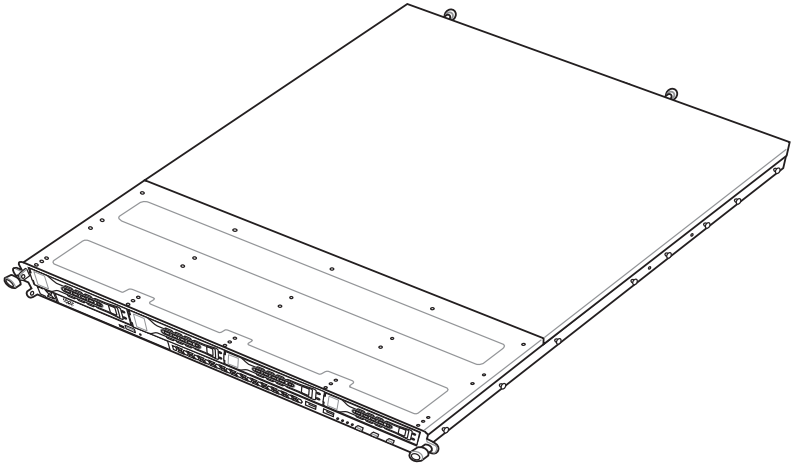
RS500-E6/PS4

Configuration Guide



E4332

First Edition V1
February 2009

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Revision history

Revision	Revision history	Date
V1	First release of RS500-E6/PS4 configuration guide	February 2009

Safety information

Electrical Safety

- Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.
- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing any additional devices to or from the system, contact a qualified service technician or your dealer. Ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you service.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your dealer.

Operation Safety

- Servicing of this product or units is to be performed by trained service personnel only.
- Before operating the server, carefully read all the manuals included with the server package.
- Before using the server, ensure all cables are correctly connected and the power cables are not damaged. If any damage is detected, contact your dealer as soon as possible.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Place the server on a stable surface.

This product is equipped with a three-wire power cable and plug for the user's safety. Use the power cable with a properly grounded electrical outlet to avoid electrical shock.

Lithium-Ion Battery Warning

CAUTION! Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

CD-ROM Drive Safety Warning

CLASS 1 LASER PRODUCT

Heavy System

CAUTION! This server system is heavy. Ask for assistance when moving or carrying the system.

Chapter 1

This chapter describes the key features of RS500-E6/PS4. It includes the product overview and general specifications.

Product introduction

1.1 Key features

Mass Storage & Memory Capacity

RS500-E6/PS4 has four 3.5” hot-swap HDD bays to support SATA or SAS HDDs, meeting the demand of mass storage, using 12 DDR3-DIMM slots for enhanced memory scalability.

Scalable & Flexible RAID solution –ASUS PIKE upgrade kit

ASUS unique PIKE upgrade kit meets the demand of direct SAS RAID upgrade solution, connected through a unique slot without sacrificing system expandability, and compatible with all ASUS Tylersburg system.

User-friendly Server Remote Management - ASMB4-iKVM upgrade kit

With ASMB4 upgrade kit in remote severs, Local users can remote-manage remote severs by keyboard, video monitor and mouse (KVM) of local side computer, and share the date saved in a local side drive to remote target servers. It provides the most quick and efficient way to recover the system in service and significantly improves the system’s availability by the complete remote management tools.

Virtualization Support

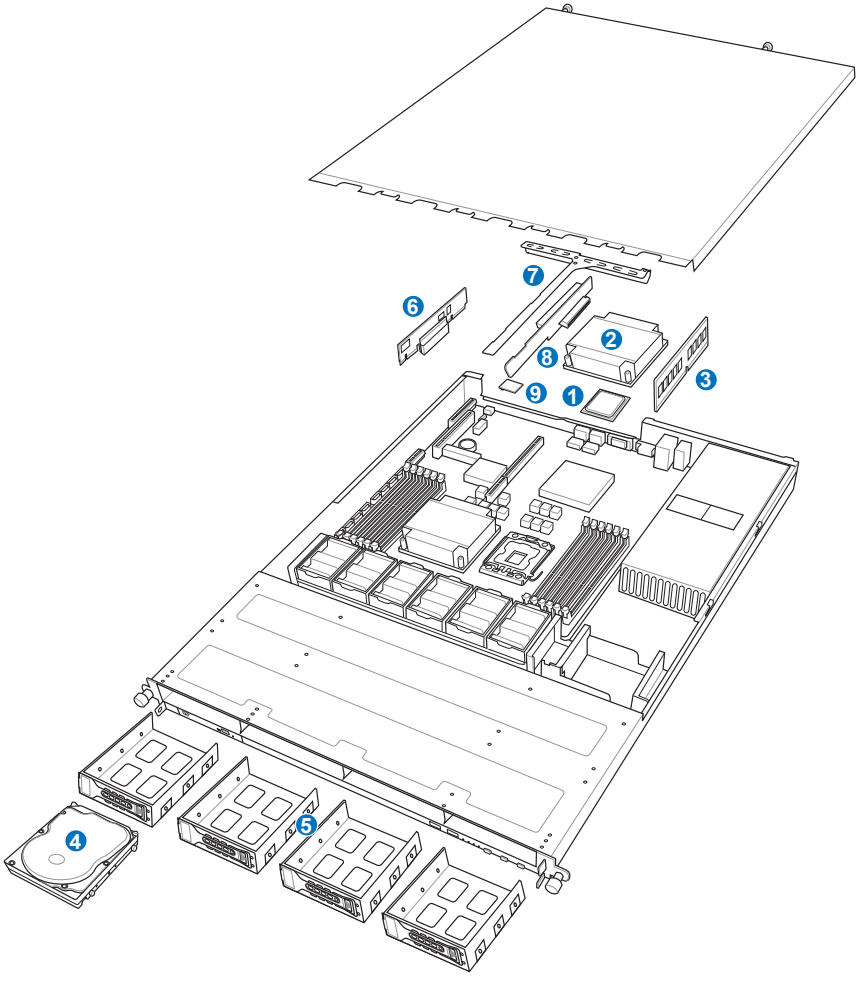
With Virtualization, Different application and operation software could share hardware equipments in one system, It could increase server utilization, and reduce IT total cost of ownership.RS500-E6/PS4 supports virtualization and is certified by VMware.

Green Design with high power efficiency

With 80+ PFC high efficiency power supply, RS500-E6/PS4 is able to reduce the power loss and power consumption, and save power bill for users.

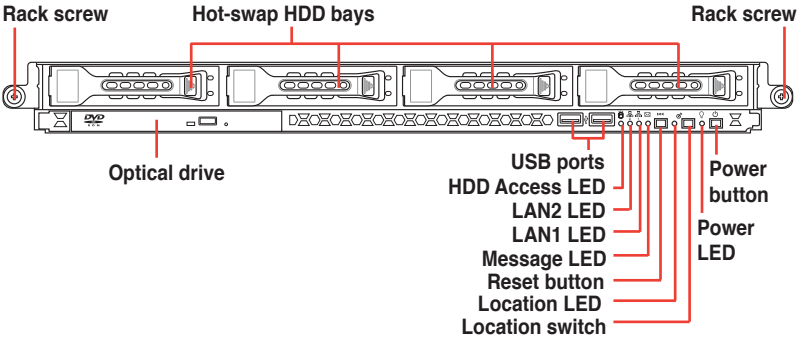
ASUS EPU technology, which intelligently calibrates the best possible settings to ensure the best power efficiency, and all Japan-made 5000hr ultra durable conductive polymer capacitors onboard provide durability, improved lifespan.

1.2 System overview

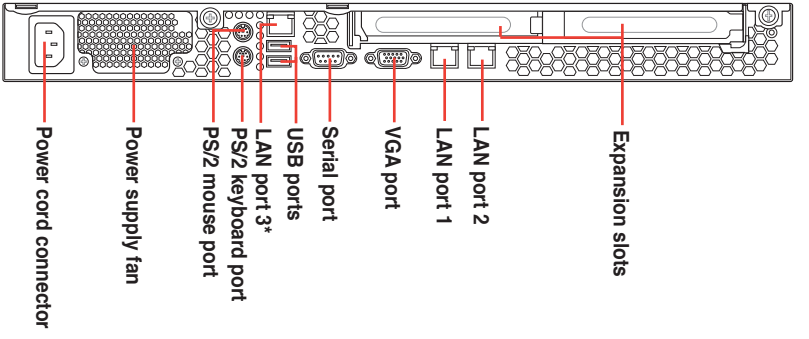


Items	Items
1. Central processing unit (CPU)	6. PIKE 1064E/1078 RAID module (optional)
2. CPU heatsink	7. Riser card bracket
3. System memory	8. Riser card
4. Hard disk drives	9. ASUS Server management board (optional)
5. HDD trays	

1.3 Front panel features



1.4 Rear panel features



- * The port is for ASUS ASMB4-iKVM controller card only.

1.5 System specifications

Model Name		RS500-E6/PS4
Processor / System Bus		2 x Socket LGA1366
		Intel® Xeon® 5500 series processors (45nm)
		Quad-Core / Dual-Core
		QPI 4.8 / 5.86 / 6.4 GT/s
Core Logic		Intel® 5500 I/O Hub Intel® ICH10R
ASUS Features	Smart Fan	√
	ASWM 2.0	√
Memory	Total Slots	12 (3-channel per CPU, 6 DIMMs per CPU)
	Capacity	Maximum up to 96GB (RDIMM) Maximum up to 48GB (UDIMM)
	Memory Type	DDR3 1333 / 1066 / 800 Reg DIMM / Unbuffered DIMM with ECC
	Memory Size	512MB, 1GB, 2GB, 4GB and 8GB
Expansion Slots	Total PCI/PCI-X/ PCI-E Slots	3
	Slot Type	1 x PCI-E G2 x16 slot (G2 x8 link) (Full-Height/ Half-Length) 1 x PCI-E G2 x8 slot (G2 x8 link) (Full-Height/ Half-Length)
	Additional Slot	1 x PIKE slot with PCI-E G1 x4 link
Storage	SATA Controller	Intel® ICH10R: 6 x SATA2 300MB/s ports Intel® Matrix Storage (for Windows only) - Supports software RAID 0, 1, 5 & 10 LSI MegaRAID (for Linux / Windows) - Supports software RAID 0, 1 & 10
	SAS Controller	Optional: ASUS PIKE 1064E 4-port SAS RAID card - Supports software RAID 0, 1 & 1E ASUS PIKE 1078 8-port SAS RAID card - Supports hardware RAID 0, 1, 10, 5 & 6
HDD Bays	I = Internal A or S will be hot-swappable	4 x Hot-swap 3.5” SAS/SATA HDD Bays

(continued on the next page)

Networking	**LAN**	2 x Intel® 82574L PCI-E GbE LANs
Graphic	**VGA**	Aspeed AST2050 / 8MB
Auxiliary Storage CD / DVD		1 x Slim-type Optical Device Bay Options: No Device / DVD-RW
Onboard I/O		1 x External Serial Port 3 x RJ-45 ports 4 x USB 2.0 ports (Front x 2, Rear x 2) 1 x VGA port 1 x PS/2 keyboard port 1 x PS/2 mouse port
OS Support		Windows® Server 2008 R2 Enterprise 32 / 64-bit Windows® Server 2003 R2 Enterprise 32 / 64-bit RedHat® Enterprise Linux AS5.0 32 / 64-bit SuSE® Linux Enterprise Server 10.0 32 / 64-bit (Subject to change without any notice)
Anti-virus Software		CA® eTrust™ 7.1 anti-virus software (Optional)
Management Solution	**Out of Band Remote Hardware**	Onboard IPMI Solution ASMB4-iKVM for KVM-over-IP support (Optional)
	Software	ASUS ASWM 2.0 and SNMP®
Dimension (HH x WW x DD)		615mm x 444mm x 43.4mm
Net Weight Kg (CPU, DRAM & HDD not inclu ded)		14 Kg
Power Supply		600W 80+ Single Power Supply
Environment		Operation temperature: 10°C ~ 35°C / Non operation temperature: -40°C ~ 70°C Non operation humidity: 20% ~ 90% (Non-condensing)

*** Specifications are subject to change without notice.**

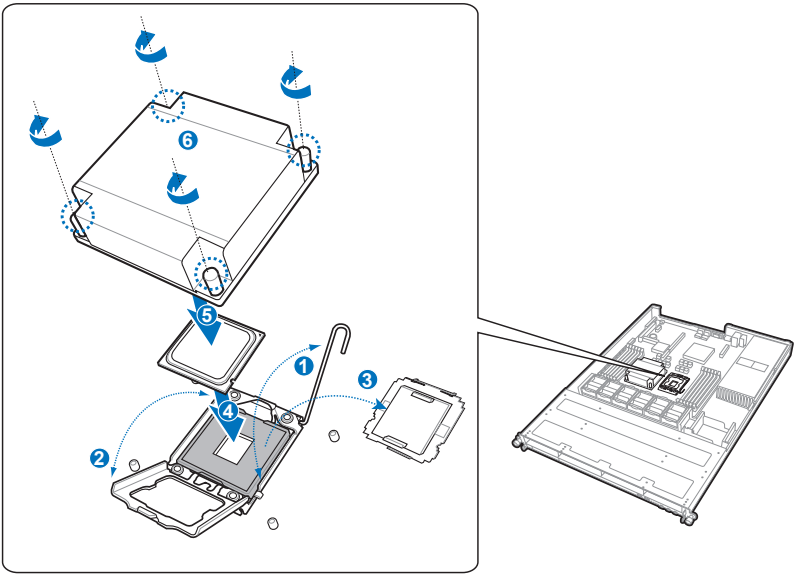
Chapter 2

This chapter lists the key components and optional accessories for the server system.

Components

2.1 Upgrading CPU and CPU heatsink

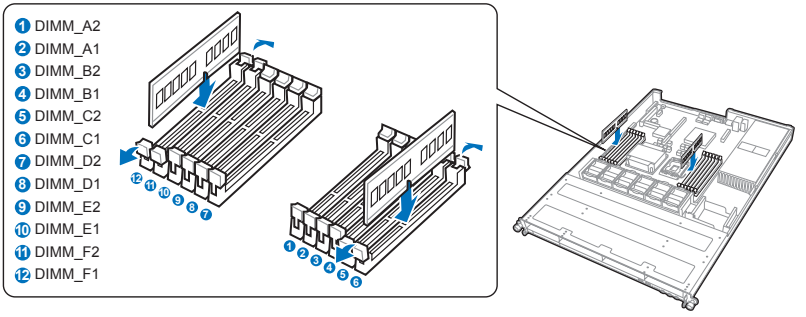
The ASUS RS500-E6/PS4 supports 1-2 Dual-core / Quad-core Intel® LGA1366 Xeon® 5500 series processor.



Order P/N	Description
90-S000U0590T	Dual-Core Intel Xeon E5502, 1.86G, QPI 4.8GT/s, 4MB L2, Single Pack with 1U Heatsink
90-S000U0600T	Quad-Core Intel Xeon E5504, 2.00G, QPI 4.8GT/s, 4MB L2, Single Pack with 1U Heatsink
90-S000U0610T	Quad-Core Intel Xeon E5506, 2.13G, QPI 4.8GT/s, 4MB L2, Single Pack with 1U Heatsink
90-S000U0620T	Quad-Core Intel Xeon E5520, 2.26G, QPI 5.86GT/s, 8MB L2, Single Pack with 1U Heatsink
90-S000U0630T	Quad-Core Intel Xeon E5530, 2.40G, QPI 5.86GT/s, 8MB L2, Single Pack with 1U Heatsink
90-S000U0640T	Quad-Core Intel Xeon E5540, 2.53G, QPI 5.86GT/s, 8MB L2, Single Pack with 1U Heatsink
90-S000U0650T	Quad-Core Intel Xeon X5550, 2.66G, QPI 6.4GT/s, 8MB L2, Single Pack with 1U Heatsink
90-S000U0660T	Quad-Core Intel Xeon X5560, 2.80G, QPI 6.4GT/s, 8MB L2, Single Pack with 1U Heatsink
90-S000U0670T	Quad-Core Intel Xeon X5570, 2.93G, QPI 6.4GT/s, 8MB L2, Single Pack with 1U Heatsink
90-S000U0680T	Quad-Core Intel Xeon W5580, 3.20G, QPI 6.4GT/s, 8MB L2, Single Pack with 1U Heatsink
90-S000U0690T	Quad-Core Intel Xeon L5506, 2.13G, QPI 4.8GT/s, 4MB L2, Single Pack with 1U Heatsink
90-S000U0700T	Quad-Core Intel Xeon L5520, 2.26G, QPI 5.86GT/s, 8MB L2, Single Pack with 1U Heatsink

2.2 Upgrading system memory

The motherboard comes with twelve (12) Double Data Rate 2 (DDR2) Fully-Buffered Dual Inline Memory Modules (DIMM) slots.



Recommended memory configurations

Installing one CPU

	CPU1						CPU2					
DIMM slots	C1	C2	B1	B2	A1	A2	D1	D2	E1	E2	F1	F2
1 DIMM					V							
2 DIMMs			V		V							
3 DIMMs	V		V		V							
4 DIMMs	V		V		V	V						
5 DIMMs	V		V	V	V	V						
6 DIMMs	V	V	V	V	V	V						
1 DIMM							V					
2 DIMMs							V		V			
3 DIMMs							V		V		V	
4 DIMMs							V	V	V		V	
5 DIMMs							V	V	V	V	V	
6 DIMMs							V	V	V	V	V	V

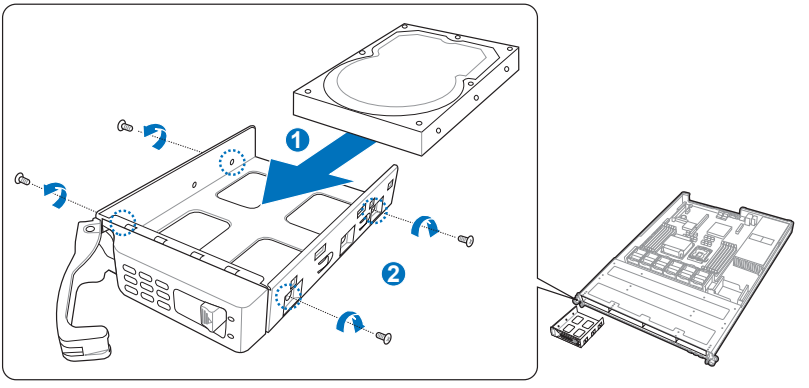
Installing two CPUs

	CPU1						CPU2					
DIMM slots	C1	C2	B1	B2	A1	A2	D1	D2	E1	E2	F1	F2
1 DIMM					V							
2 DIMMs					V		V					
3 DIMMs			V		V		V					
4 DIMMs			V		V		V		V			
5 DIMMs	V		V		V		V		V			
6 DIMMs	V		V		V		V		V		V	
7 DIMMs	V		V		V	V	V		V		V	
8 DIMMs	V		V		V	V	V	V	V		V	
9 DIMMs	V		V	V	V	V	V	V	V		V	
10 DIMMs	V		V	V	V	V	V	V	V	V	V	
11 DIMMs	V	V	V	V	V	V	V	V	V	V	V	
12 DIMMs	V	V	V	V	V	V	V	V	V	V	V	V

Order P/N	Description
90-S000I0300T	DDR3 1333 ECC REG 1G SINGLE PACK
90-S000I0310T	DDR3 1333 ECC REG 2G SINGLE PACK
90-S000I0320T	DDR3 1066 ECC REG 1G SINGLE PACK
90-S000I0330T	DDR3 1066 ECC REG 2G SINGLE PACK
90-S000I0340T	DDR3 1333 ECC UNB 1G SINGLE PACK
90-S000I0350T	DDR3 1333 ECC UNB 2G SINGLE PACK
90-S000I0360T	DDR3 1066 ECC UNB 1G SINGLE PACK
90-S000I0370T	DDR3 1066 ECC UNB 2G SINGLE PACK
90-S000I0380T	DDR3 1333 ECC REG 1G (10 in 1)
90-S000I0390T	DDR3 1333 ECC REG 2G (10 in 1)
90-S000I0400T	DDR3 1066 ECC REG 1G (10 in 1)
90-S000I0410T	DDR3 1066 ECC REG 2G (10 in 1)
90-S000I0420T	DDR3 1333 ECC UNB 1G (10 in 1)
90-S000I0430T	DDR3 1333 ECC UNB 2G (10 in 1)
90-S000I0440T	DDR3 1066 ECC UNB 1G (10 in 1)
90-S000I0450T	DDR3 1066 ECC UNB 2G (10 in 1)

2.3 Upgrading hard disk drives

The system supports four hot-swap SATAII/SAS hard disk drives.

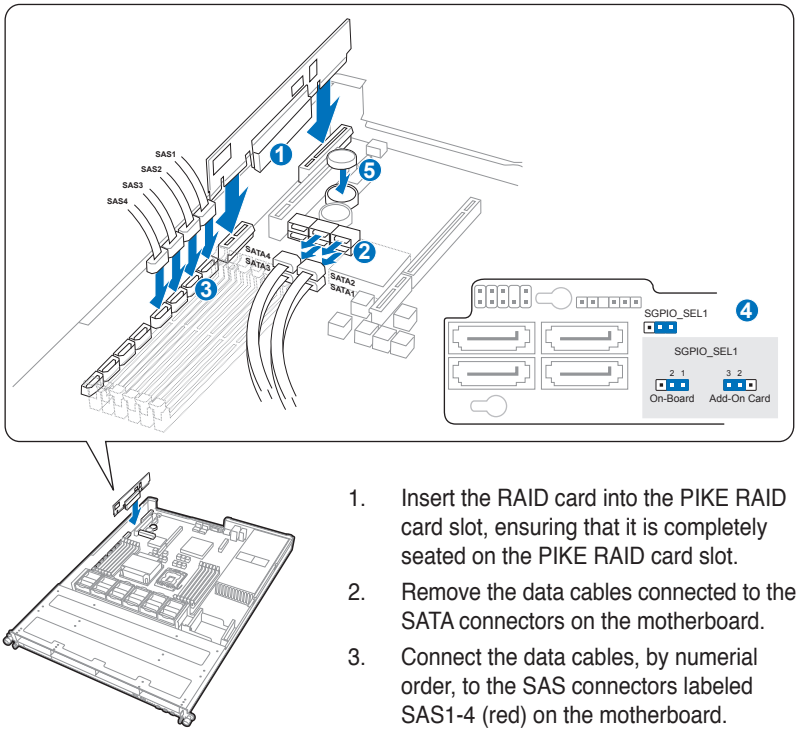


We recommend that you install identical drives of the same model and capacity for RAID configuration.

Order P/N	Description
SAS HDD	
90-S000H6210T	HDD SAS 450G 3.5” with tray (Single Pack)
90-S000H6220T	HDD SAS 300G 3.5” with tray (Single Pack)
90-S000H6230T	HDD SAS 146G 3.5” with tray (Single Pack)
SATAII HDD	
90-S000H6240T	HDD SATA2 1T 3.5” with tray (Single Pack)
90-S000H6250T	HDD SATA2 750G 3.5” with tray (Single Pack)
90-S000H6260T	HDD SATA2 500G 3.5” with tray (Single Pack)
90-S000H6270T	HDD SATA2 320G 3.5” with tray (Single Pack)
90-S000H6280T	HDD SATA2 250G 3.5” with tray (Single Pack)

2.4 Installing ASUS PIKE RAID module

The ASUS PIKE RAID module allows users to create RAID function from SAS hard disk drives connected to the SAS connectors on the motherboard.



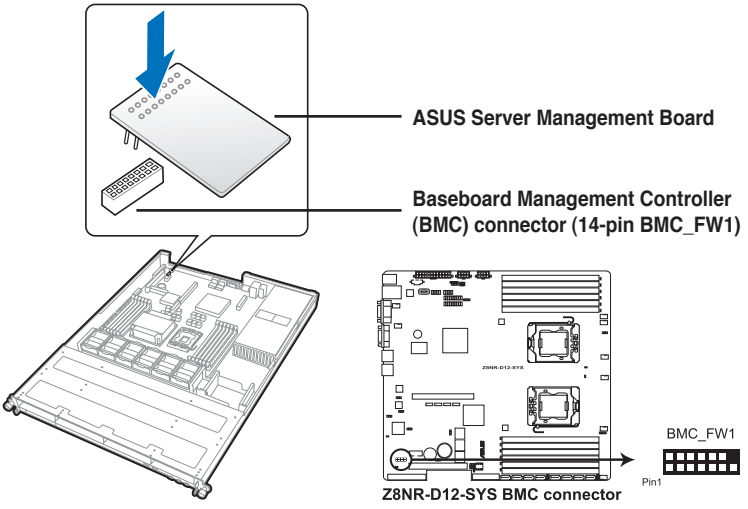
1. Insert the RAID card into the PIKE RAID card slot, ensuring that it is completely seated on the PIKE RAID card slot.
2. Remove the data cables connected to the SATA connectors on the motherboard.
3. Connect the data cables, by numerial order, to the SAS connectors labeled SAS1-4 (red) on the motherboard.
4. Set the SGPIO_SEL1 jumper on the backplane to pin 2-3 when connecting data cables to the SAS connectors on the motherboard.
5. Install the i Button*.

* PIKE 1078 module won't function if the i Button is not installed.

Order P/N	Description
90-C1SCM0-00UAY00Z	ASUS PIKE 1064E 4-port SAS Module (Support Integrated RAID 0, 1, 1E)
90-C1SCN5-00UAY10Z	ASUS PIKE 1078 8-port SAS RAID Module (Support Hardware RAID 0, 1, 5, 6, 10)

2.5 Installing ASUS Server Management Board

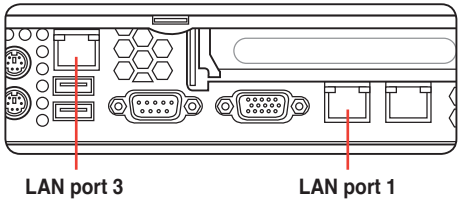
ASUS Server Management Board is an Intelligent Platform Management Interface (IPMI) 2.0-compliant board that allows users to monitor, control and manage a remote server from the local or central server in local area network (LAN).



ASMB4-iKVM

- Remote real-time access to servers with full control by keyboard, video monitor and mouse (KVM) of a single local computer from anywhere at any time. In addition, KVM function is based on BIOS-level access, therefore, even the server OS is down, the KVM module can still work to provide around-the-clock remote monitor and diagnosis through GUI (Web-based Graphical User Interface).
- Advanced server management functions including “remote power on/off/reset”, “remote hardware health monitoring” and “system event log”.
- Allows administrators to share the date saved in a local drive (floppy, CD/DVD-ROM, flash device, HDD) to target servers, which makes data-sharing convenient.

We recommend to use LAN port 3 (dedicated LAN) or LAN port 1 (shared LAN) for server management.



Order P/N	Description
90-C1SD80-00UAN00Z	ASMB4-iKVM Module (6 in 1)

2.6 OS support list

OS support list
Windows® Server 2008 Enterprise 32/64-bit
Windows® Server 2003 Enterprise 32/64-bit
RedHat® Enterprise Linux AS5.0 32/64-bit
SuSE® Linux Enterprise Server 10 32/64-bit

Order P/N	Description
90-S00SW7140T	Windows® Server 2008 STD 64-bit ENG
90-S00SW7150T	Windows® Server 2008 STD 64-bit TCH